

GREATNESS  
**STEMS**  
FROM IOWANS



# 2015 Statewide STEM Summit

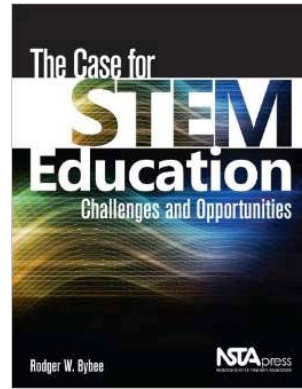
STEM-Focused Schools: Redesigning  
STEM Learning Environments

John Bedward  
Buena Vista University

Mark McDermott  
The University of Iowa

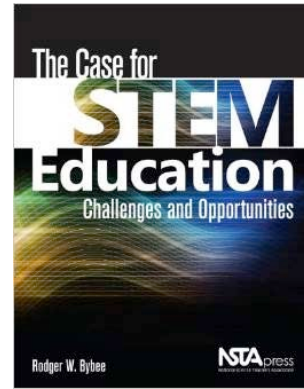
# Goals of STEM Education

- a STEM-literate society
- a general workforce with 21st century competencies
- an advanced research and development workforce focused on innovation



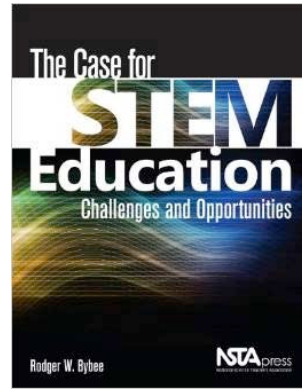
# What is a STEM-literate society?

- **Knowledge attitudes and skills** to identify problems in life situations, **explain the natural and designed world**, and draw evidence-based conclusions about STEM-related issues
- understanding of the **characteristic** features of STEM disciplines as **forms of human knowledge, inquiry and design**
- awareness of how STEM disciplines **shape our material, intellectual, and cultural environments**; and
- willingness to **engage in STEM-related issues** and with ideas of science, technology, engineering and mathematics as a constructive, concerned, and reflective citizen

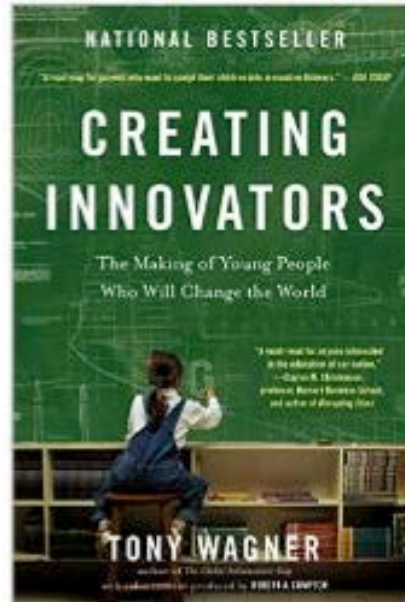
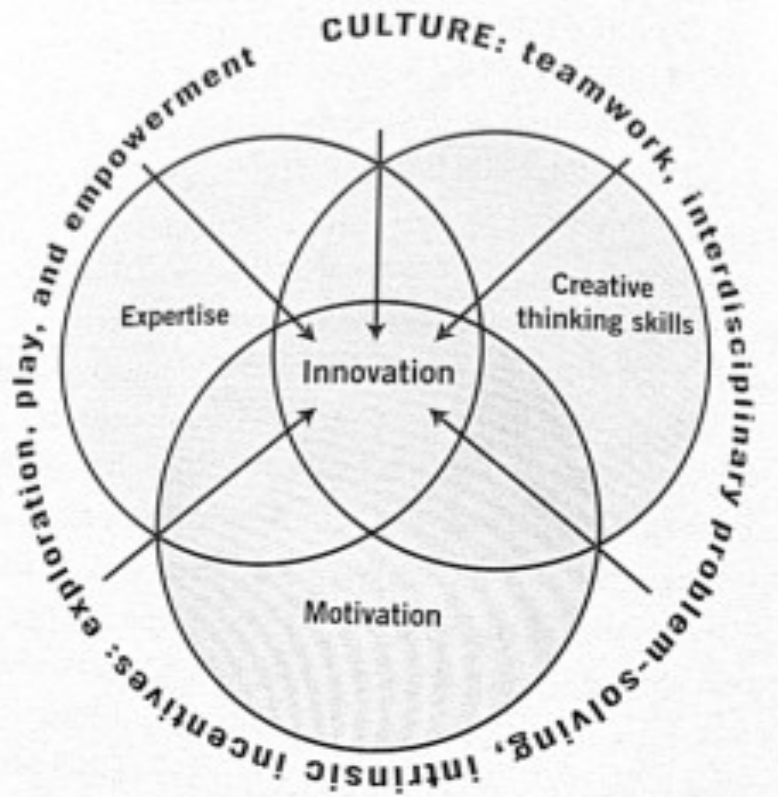


# 21st Century Skills

- adaptability, resilience and grit
- complex communication and social skills
- nonroutine problem solving
- self-management, self-development & self-regulation
- systems thinking
- global awareness



# Creating Innovators



# Questions to Ponder

1. What were the biggest challenges / obstacles?
2. What are your top 2 or 3 suggestions for a school looking to create a STEM classroom?
3. What are your top 2 or 3 tools / software / apps / etc. that you would recommend?
4. What are the top 2 or 3 ways you are utilizing the room?
5. What are your top 2 or 3 hopes for how you could utilize the room?
6. Any specific recommendations for practical / technical issues?

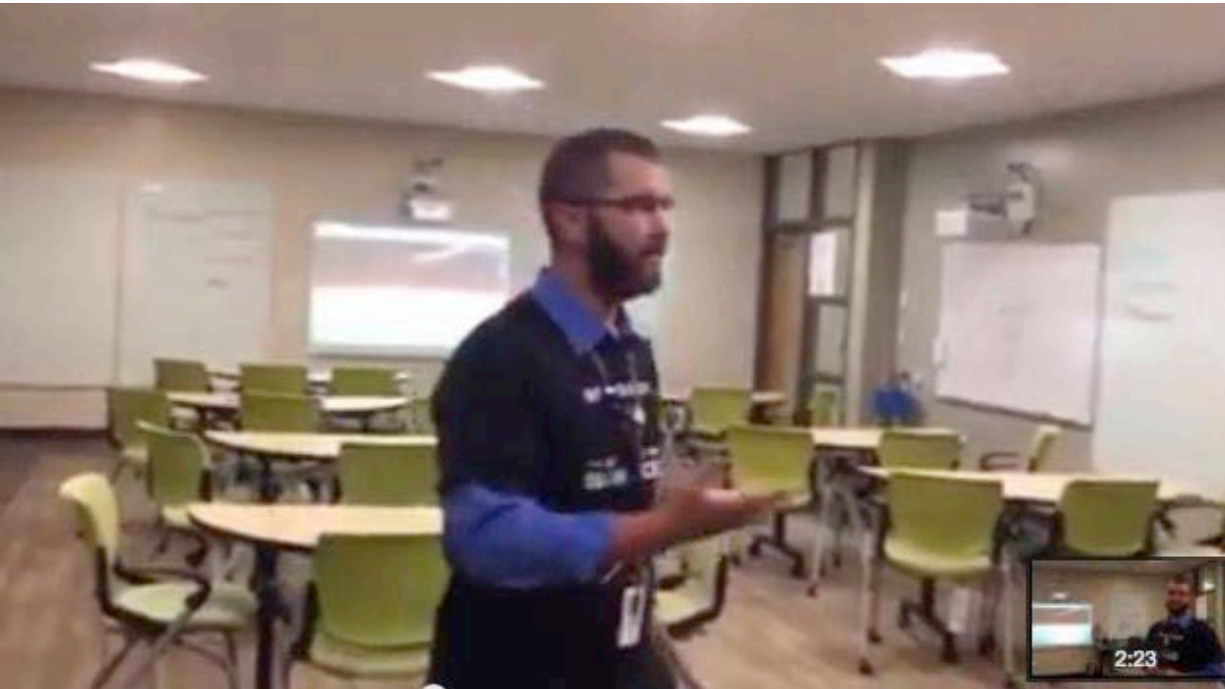
# Sioux Center High School



A partnership with Dordt College to redesign learning spaces and curriculum. They will not only cost share, partner in professional development and connect the college and high school classrooms but they will also collaborate through close relationships across campuses.



# Davenport Community School District



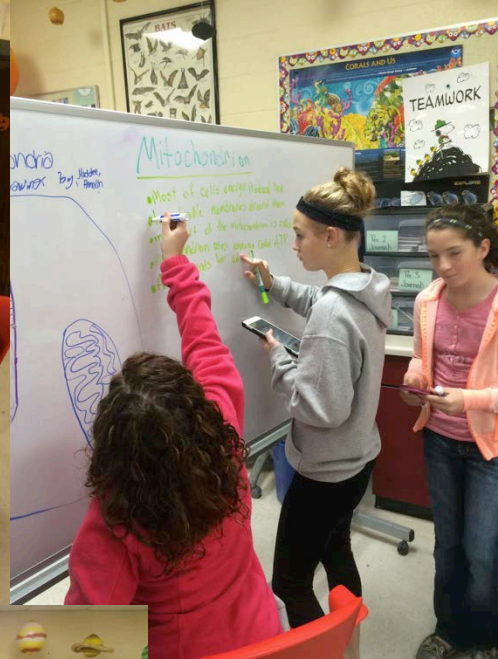
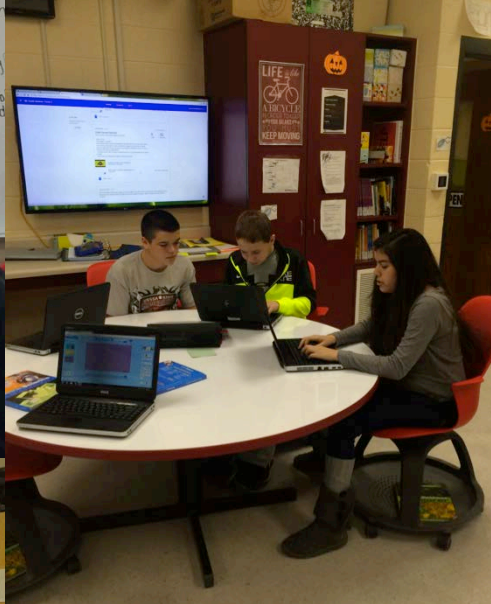
Implementing an active learning classroom that will integrate STEM coursework and highly focused vocational skills at West High School. Their curriculum will strengthen STEM disciplines with the necessary 21<sup>st</sup> Century Skills and other critical shortage areas, needed in today's workforce.



# Mount Pleasant Middle School



**Mount Pleasant Middle School** is the only middle-level learning environment chosen to receive the award. The new classroom will replicate the University of Iowa's Transform, Interact, Learn and Engage (TILE) classroom as a model in its learning environment to facilitate collaboration, peer instruction and activities enhanced through advanced technology. Their STEM classroom will serve as a prototype for a school redesign which may be duplicated in other classrooms in the following year.





# Des Moines Hoover High School



**Des Moines Hoover High School**, which serves one of the most diverse student populations in the state, plans to launch a STEM Academy for 102 boys and girls. The academy's goals are to create the ideal environment for empowered collaboration, a STEM-focused community and building a quality next generation of innovators.



[STEM Classroom In Action](#)

